

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 16. (Canceled)

17. (New) A network device for optical data communications, comprising:

a central array comprised of a plurality of central node transmitters and a plurality of central node receivers, wherein said central array is divided into at least one subarray;

at least one secondary node comprised of at least one dedicated secondary node receiver and a plurality of secondary node transmitters, wherein each said secondary node is coupled to each said subarray;

a plurality of optical communications lines coupling said central array and said secondary node; and

a means for processing said optical data using a receiver reserved protocol wherein each said secondary node receives said optical data only on said dedicated secondary node receiver.

18. (New) The network device according to claim 17, further comprising at least one additional central array coupled to said central array and said secondary node.

19. (New) The network device according to claim 18, further comprising at least one secondary node coupled to said additional central array.

20. (New) The network device according to claim 17, wherein said optical data includes minimal header information.

21. (New) The network device according to claim 17, wherein said optical communications lines is an ordered fiber array.

22. (New) The network device according to claim 17, wherein said optical communications lines are coupled with a one-to-one correspondence between said central array and said secondary node.

23. (New) The network device according to claim 17, wherein said central node transmitters are selected from the group consisting of Vertical channel surface emitting lasers (VCSELs), light emitting diodes (LEDs) and Resonant Cavity Light Emitting Diode (RCLED).

24. (New) The network device according to claim 17, further comprising a central array processor on said central array with a first-in-first-out (FIFO) buffer.

25. (New) The network device according to claim 17, wherein each said secondary node is a leaf node.

26. (New) The network device according to claim 17, wherein each said secondary node is a combination of at least one additional central array and at least one additional leaf node.

27. (New) The network device according to claim 17, further comprising a watchdog function for each said secondary node.

28. (New) A reconfigurable optical data communications topology, comprising:  
a central optoelectronic array divided into a plurality of subarrays, each of said subarrays having a plurality of central array emitters and a plurality of central array detectors, wherein said central array emitters and central array detectors are fabricated onto a substrate and coupled to electronic circuitry;  
an ordered fiber array comprising a plurality of fiber optic cables that that are coupled on a first end of said fiber optic cables to said central array emitters and said

central array detectors, and wherein said ordered fiber array is divided into a plurality of fiber optic bundles at a second end; and  
a plurality of nodes with at least one dedicated node detector and more than one node emitter, wherein said node emitter and node detector of each said nodes are optically coupled to said subarrays by said second end of said fiber optic cables, and wherein said central array communicates with said nodes using a receiver reserved protocol.

29. (New) The reconfigurable optical data communications topology according to claim 28, wherein said topology is configured from the group consisting of: linear bus network, tree topology, star network, switched fabric and ring network.
30. (New) The reconfigurable optical data communications topology according to claim 28, further comprising an optical interconnect coupling said central optoelectronic array to said ordered fiber array.
31. (New) The reconfigurable optical data communications topology according to claim 28, wherein at least one of said nodes comprises a central processing unit.
32. (New) The reconfigurable optical data communications topology according to claim 28, wherein at least one of said nodes is on said substrate.
33. (New) The reconfigurable optical data communications topology according to claim 28, wherein said at least one node detector communicates with said central array over a multi-bit bus.
34. (New) The reconfigurable optical data communications topology according to claim 28, further comprising an arbitration scheme.

35. (New) The reconfigurable optical data communications topology according to claim 28, wherein said fiber optic bundles at said second end are relocatable to another node .

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### **AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawings includes changes to Fig. 10B. This sheet replaces the original sheet Fig. 10B which corrects the reference label for item 960 and otherwise alters drawing to comport with the description in the specification. The Replacement Sheet is denoted in the top margin. Also attached is the Annotated Sheet Showing redlined Changes which is also denoted in the top margin.

As detailed herein, the changes are intended to correct the drawings according to the specification and shown in the originally submitted drawings. Reference label 960 denotes the fiber bundle to the leaf nodes, which is now shown as the bi-directional arrow from the divided central node array 950. No new matter is added.